Amendments to the Specification

Please replace the paragraph beginning at page 11, line 14, with the following amended paragraph:

The server and controller 20 may be a computer including memory, a processor, a communications port, a display screen, keyboard, and a mouse. Further, the server and controller 20, for example, may be a web server, such as an ~~Apache~~ APACHE or an AOL Server, that uses the Common Gateway Interface (CGI) to allow programs to be executed within the server and controller 20. These programs may provide services to a user via the web such as static web pages, a scheduling mechanism to allow a user to schedule the execution of a specific lab or course at a given time, a lab or course catalog displayed via a web page showing all labs or courses which can be executed, an electronic commerce engine through which users may purchase labs or courses online, and/or a web page which provides a graphical interface for accessing the user devices in specific labs and initiating device control software.

Please replace the paragraph beginning at page 12, line 17, with the following amended paragraph:

The user computer 28 may be a standard user computer such as an IBM compatible Personal Computer (PC) or ~~Macintosh~~ MACINTOSH. Further, the user computer may include a memory, a processor, a keyboard, a mouse, and a port for receiving and transmitting information. The keyboard and mouse may be used by a user to enter information into the computer. The memory may be used for storing programs, such as the browser and network applications programs. The processor may be used for executing these programs. The display screen may be used for displaying information to the user such as html pages, and screens for the browser and network applications programs. The communications port may be used for sending and receiving information over a communications link.

Please replace the paragraph beginning at page 13, line 20, with the following amended paragraph:

After the course is selected, the server and controller 20 sends an instruction to the pod controller to initialize a pod 26 associated with the selected course (S508). Further, the server and controller 20 sends an instruction to the firewall 16 to permit the user's CPE 12 to access

the pod controller 24 (S510). The user then connects to the pod controller 24 using a network application program 32, such as ~~Telnet~~ TELNET (S512). Through this mechanism, the user can exercise control over the user devices and perform the assigned training exercise.

Please replace the paragraph beginning at page 14, line 17, with the following amended paragraph:

FIG. 4 provides an example of a graphical interface a user may see when interacting with a lab including three ~~Cisco~~ CISCO routers. The available functions in this example are: reset 402, save configuration 404, load configuration 406, and cycle-break 408. The user may click on the icon 410 of a user device to open a communications connection to the user device when completing the objectives of the lab or course. Further, in this example, the user may click on links for the instructions 412, scenario and assignment 414, mentoring 416, view plan 418, suggested approach 420, sample solution 422, and check results 424. By clicking on one of these links, the user will be taken to an associated web page. These links will be discussed in greater detail later.

Please replace the paragraph beginning at page 18, line 9, with the following amended paragraph:

Individual students need not be located at the same physical location. For example, one student may be located at one physical location, another student may be located in a physical location in a different city, a third student may be located in yet another city, and so on. The communications between the instructor and students can be supported using a variety of communications applications. For example, ILINC, ~~Placeware, or Caliver~~ PLACEWARE, or CALIVER communications applications may be used for supporting these communications. Further, the class can be conducted synchronously or asynchronously.

Please replace the paragraph beginning at page 25 line 1 with the following amended paragraph:

In one embodiment, after completion of a lab, the final configurations of the user devices along with other information are archived so that the user may retrieve the information and configurations at a later time. FIG. 20 illustrates an example of a page that includes archived results after a user completes a lab where the user devices are ~~Cisco-type~~ CISCO-type

routers. In this figure, the data is organized such that a user may select the component of the data they wish to view while hiding the details of the other components. Thus, a user may quickly select the section of data they wish to view and ignore the other sections. For example, as illustrated, a user may select to individually view plan 2002, debrief 2004, or saved configurations 2006. By selecting plan 2002, a user may view, for example, information regarding their answers to the questions regard their plan that they had previously entered. By selecting debrief 2004, a user may view information regarding their answers to questions during a debriefing session and by selecting saved configurations 2006, a user may view the final configurations of the user devices.

Please replace the paragraph beginning at page 28, line 4, with the following amended paragraph:

FIG. 23 illustrates a simplified block diagram of the RCM 2310 connected to a server and controller 2312, a user computer 2314, an instructor computer 2315, and a pod 2316 that includes one or more remote devices 2318. The server and controller 2312 may connect to the RCM 2310 over an Internet or Intranet 2330 or via a direct connection and may be a server controller for a virtual lab system (i.e., a system in which a single user exercises control over the pod devices), a virtual classroom, or any other type of server controller. The user computer 2314 may connect to the Resource Control Module over an Internet or Intranet 2318 or via a direct connection. The devices 2318 may include any type of device, such as a router, a switch, a network server, personal computers (PCs), UNIX workstations (~~Sun~~™ SUN, etc.), or any other type of device. Further, as with the previous described embodiments the connections between the server and controller 2312) user computer 2314 and RCM 2310 may be through a firewall (not shown).

Please replace the paragraph beginning at page 29, line 15, with the following amended paragraph:

The control module 2320 accomplishes this by employing a common set of instructions that different types of server and controller's 2312 can use to communicate with the control module 2320. These instructions are preferably in the form of a remote procedure call (RPC)

language, such as ~~Java~~™ JAVA RMI. In an embodiment, the following general message types are used by the RCM's control module 2320:

Please replace the paragraph beginning at page 31, line 1, with the following amended paragraph:

The operations module 2322 preferably performs actual device control. This module is designed such that new devices can be added without major modification to the existing software. This is accomplished by encapsulating the device specific details in device specific scripts. The scripts may be written in a script language, such as ~~Expect~~ EXPECT or ~~Perl~~™ PERL. and are used to communicate with the device in a send this and expect that manner. Thus, by using a script, an entire procedure for a device can be scripted using basic device commands. The operations module 2322 by looking in database 2344 can tell from a particular instruction it receives, which script to call for each device. Thus, the operations module 2322 upon receiving a generic instruction to perform an operation on a device 2318 can use the particular script for the device 2318 to send the device specific instructions to the device 2318. In other words, the operations module 2322 may command the execution of the appropriate script based on generic information that is received from the control module 2320. In addition to device control, the operations module 2322 maintains the status of all pods and the devices within each pod.

Please replace the paragraph beginning at page 32, line 15, with the following amended paragraph:

These software modules preferably communicate using an RPC, such as ~~Java~~™ JAVA. RMI. RMI is used to receive messages from external systems such as the server and controller 2314 as well as being used for module to module communication. Further, as will be obvious to one of skill in the art, any other type of remote command method may be used in place of RMI. For example, CORBA may be used.

Please replace the paragraph beginning at page 34, line 8, with the following amended paragraph:

When a user wishes to communicate with the device 2318, it sends instructions to the respective read thread 2408 in the proxy module. The user may send this information using a particular application that depends on the specifics of the device 2318. For example, this information can be sent to the read thread by a user using ~~Telnet~~ TELNET, a web browser, or any other network application that the device 2318 requires for communications. The read thread then examines the instructions and depending on the users permissions either forwards the instruction to the device 2318 or discards it. Thus, potentially damaging user commands can be prevented from reaching the 2318. Further, different permissions may be set for different users and/or instructors. For example, it may be desirable that a certain user or instructor not be allowed to send instructions to the device 2318. Thus, the read thread 2408 for such a user can discard all instructions it receives from that user for the device 2318.